IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method for triggering input commands of a program run on a computing system, comprising:

defocusing an image capture device that is placed in a direction of a display screen;

monitoring a field of view in front of the image capture device;

identifying a light source within the field of view, the light source being pointed in the direction of the image capture device, the identifying being done from a defocused image produced by the ~~defocused~~ image capture device, such that defocusing the image capture device produces an expanded region of pixels around the light source;

tracking the light source as it is moved ~~pointed toward the display screen~~, the expanded region of pixels around light source increasing pixel data usable to identify the light source during the tracking, and the display screen illustrating objects that can be interacted with;

detecting a change in light emitted from the light source; and

in response to detecting the change, triggering an input command at the program run on the computing system, the input command acting to interface with one or more objects illustrated on the display screen.

2. (Previously presented) The method of claim 1, wherein the change in light is one of a color change, and a light variation change.

3. (Original) The method of claim 1, wherein the light source is a light emitting diode (LED) capable of emitting multiple colors of light.

4. (Original) The method of claim 1, wherein the method operation of identifying a light source within the field of view includes,

masking background light effects within the field of view.

5. (Original) The method of claim 4, wherein the method operation of masking background light effects within the field of view includes,

reducing an amount of light allowed into an aperture of the image capture device.

6. (Previously presented) The method of claim 1, wherein the input command causes a mode change linked to a cursor displayed on the display screen associated with the computing system.

7. (Previously presented) The method of claim 1, wherein the method operation of identifying a light source within the field of view includes,

defining an area representing the light source within a grid associated with the image capture device and the defocusing is configured to expand the area representing the light source within the grid.

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9. (Previously presented) The method of claim 7, wherein the method operation of identifying a light source within the field of view includes,

calculating a centroid of an image representing the light source through a grid associated with the image capture device, such that the centroid is of the expanded area representing the light source within the grid.

10. (Original) The method of claim 9, further comprising:

translating coordinates of the centroid to a location on a display screen associated with the computing system;

detecting movement of the light source within the field of view; and

correlating the movement of the light source to movement of a cursor on the display screen.

11. (Currently amended) A method for detecting input commands from an input source within a field of sight of an image capture device positioned near ~~at~~ a display screen, comprising:

defocusing the image capture device;

minimizing an amount of light entering the image capture device;

detecting a first color light from the input source through the image capture device, the first color light being directed toward the display screen and the image capture device, such that directing the first color toward the display screen enables interactive movement of a cursor on the display screen;

detecting a change from the first color light to a second color light;

identifying a position of the light entering the image capture device from the defocused image capture device, the defocusing causing the light entering the image capture

device to expand and produce an expanded region of pixels around the light to facilitate identification and tracking of the light; and

presenting a mode change in response to changing to the second color light, the mode change operating to cause an action on one or more objects being illustrated on the display screen.

12. (Original) The method of claim 11 wherein the method operation of minimizing an amount of light entering an image capture device includes,

reducing an aperture size of the image capture device to enhance a signal representing light from the input source relative to other captured image data.

13. (Original) The method of claim 12 wherein the method operation of reducing an aperture size of the image capture device results in filtering background light capable of interfering with light received from the input device.

14. (Original) The method of claim 11 wherein the method operation of detecting a first color light signal from the light source through the image capture device includes,

determining a location of a center of the first color light signal on a coordinate system associated with the image capture device; and

mapping the location to a corresponding location on a display screen.

15. (Original) The method of claim 11 wherein the method operation of detecting a change from the first color light to a second color light includes,

detecting the second color light from the input source; and

comparing pixel values associated with the first color light to pixel values associated with the second color light.

16. (Original) The method of claim 11 further comprising:

reverting to the first color light from the second color light; and

in response to reverting to the first color light, terminating the mode change.

17. (Original) The method of claim 11 wherein the mode change is associated with one of a click and drag operation and a highlighting operation.

18. (Original) The method of claim 11 wherein the first color light and the second color light originate from one of a single light emitting diode and multiple light emitting diodes.

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34. (Currently amended) A computing system, comprising:

an image capture device being positioned in a direction of a display screen, the image capture device having a diffuser to produce a defocused image;

logic for monitoring a field of view associated with the image capture device;

logic for tracking a position of a light source associated with an input object, the defocused image producing an expanded region of pixels around the light source to increase pixel data usable to identify the light source during tracking, the light source being pointed toward the display screen, the monitoring and tracking being of the light source from the defocused image;

logic for detecting a color change in the light source; and

logic for triggering a mode change command at a main program run through the computing system, in response to the detected color change in the light source, the mode change triggering an action for interfacing with one or more objects illustrated on the display screen, the color change being from a first color to a second color, and discontinuing the mode change command when the color change in the light reverts to an initial color or another color.

35. (Original) The computing system of claim 34, wherein the computing system is one of a game console, a general computer, networked computer, and a distributed processing computer.

36. (Original) The computing system of claim 34, wherein the logic for detecting a color change in the light source includes,

logic for detecting a change in a pixel value associated with the light source; and

logic for detecting a change in a position of the light source relative to the image capture device.

37. (Original) The computing system of claim 34, wherein each logic element is one or a combination of hardware and software.

38. (Original) The computing system of claim 36, wherein the logic for detecting a change in a position of the light source relative to the image capture device includes,

logic for calculating a centroid of an image representing the light source through a grid associated with the image capture device.

logic for translating coordinates of the centroid to a location on a display screen associated with the computing system;

logic for detecting movement of the light source within the field of view; and

logic for correlating the movement of the light source to movement of a cursor on the display screen.

39. (Original) The computing system of claim 38, wherein the logic for correlating the movement of the light source to movement of a cursor on the display screen includes,

logic for adjusting a scale associated with translation of the movement of the light source to the movement of the cursor according to a distance of a user relative to the image capture device.

40. (Original) The computing system of claim 34, further comprising:

logic for minimizing an amount of light entering the image capture device in order to mask background light not associated with the light source.

41. (Currently amended) An system including input device for interfacing with a computing device, the system comprising:

(a) the input device including,

(i) a body;

(ii) a light emitting diode (LED) affixed to the body of the input device;

(iii) a power supply for the LED;

(iv) a mode change activator integrated into the body of the input device, the mode change activator configured to cause a variation of a light originating from the LED, wherein the variation is capable of being detected to cause a mode change at the computing device;

(b) a display screen configured to illustrate objects;

(c) an image capture device having a diffuser, the diffuser configured to render defocused images by the image capture device so as to produce an expanded region of pixels around a light of the LED, the expanded region of pixels increasing pixel data to identify the light of the LED, the image capture device being placed at a location of the display screen, the image capture device being configured to capture the LED of the input device when directed toward the display screen to enable interaction with illustrated objects as a result of the mode change, the mode change being a result of the LED of the input device changing from one color to another color, and the mode change being discontinued when the changing in light reverts back to an original color or another color, as triggered by the mode change activator of the input device.

42. (Previously presented) The system of claim 41, wherein the mode change activator is configured to cycle between two variations of the light.

43. (Previously presented) The system of claim 41, wherein the body includes a first end and a second end, a first LED affixed to the first end, a second LED affixed to the second end.

44. (Previously presented) The system of claim 43, wherein the first LED emits a first variant of light and the second LED emits a second variant of light.

45. (Previously presented) The system of claim 41, further comprising:
an infrared emitter.

46. (Previously presented) The system of claim 41, wherein the body includes a first LED adjacently located to a second LED, the first LED emitting a first variant of light and the second LED emitting a second variant of light.

47. (Previously presented) The system of claim 41, wherein the body is configured to be held within a human hand.

48. (Previously presented) The system of claim 41, wherein the body is a ring configured to fit over a human finger.

49. (Previously presented) The system of claim 41, wherein the body is thimble shaped and the LED is affixed to a base of the thimble shaped body.

50. (Previously presented) The system of claim 41, wherein the mode change activator is configured to cycle between at least three light variant changes.